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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
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PSW FOREST AND RANGE EXPERIMENT STATION
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REPLY TO: 3420 Pest Management Evaluation

DATE: December 12, 1985

SUBJECT: Evaluation of Fomes annosus in Precommercially Thinned Pine Stands on the Lassen National Forest (Report No. 85-36)

TO: Forest Supervisor, Lassen National Forest

In October 1985, FPM pathologist Gregg DeNitto and entomologist John Pierce ran a survey in thinned ponderosa pine stands on the Hat Creek District, Lassen NF. The purpose was to determine if a stump diameter exists below which Fomes annosus is not an effective pathogen in the eastside pine type and, therefore, borax treatment is not necessary.

During day 1, they examined the non-boraxed sections of stands that had been thinned in 1969 as part of Graham's test of the efficacy of borax. There was no mortality in either of the two stands, including in the plots that had been inoculated. All of the stumps were 8 inches in diameter or less. Of these, 93% were 5 inches or less. Because these stands were not providing an adequate range of diameters, they decided to examine other stands that had been operationally thinned in the 1960's and 1970's.

Most of the precommercially thinned stands had few, if any, stumps in the 8 to 12 inch diameter classes. This was the size range of most concern to determine at what point F. annosus becomes a problem. They decided to drop the strip survey technique through precommercially thinned stands and to drive roads looking for pine mortality. When mortality was observed, it was determined if F. annosus was involved and if there was a source of infection nearby. If there was a stump, it was measured and examined for conks of F. annosus. Root sections of some dead trees were returned for culturing to confirm the identification of suspicious symptoms with the presence of F. annosus.

Of the 83 mortality spots checked, only 8 had no stumps greater than 18 inches diameter as an apparent source of infection. Two of these centers had no obvious source within reasonable limits. The remaining 6 centers had numerous small stumps as possible sources of infection. F. annosus was confirmed in each of these 6 centers by culturing root segments from the dead trees in the laboratory. The largest stumps were 6 inches in two centers, 8 inches in another two, and 10 inches in the third two centers. F. annosus could not be confirmed in any stumps. None had typical decay and most had been riddled by termites. The only method to determine which stump was

the source would have been to excavate the root system of the infected tree and follow the infection back to the contact with a root from one of the stumps. This was neither time nor cost effective.

The present policy on the Lassen NF in the eastside pine type is to use borax on all commercial timber sales. Borax is not used in precommercial thinnings, except those mechanically sheared. In general, stumps in precommercial thinnings are 8 inches or less in diameter. The majority are 2 to 6 inches. Rarely are larger stumps created.

Although a specific stump size below which borax is not necessary was not identified, sufficient information was gained to support the continuation of the present policy on the Lassen NF. It would appear that most annosus root disease infections occur in medium and large sawtimber-size stumps. Rarely were infection centers observed around stumps of small sawtimber-size and smaller (<18 inches diameter). It is not the intent of this memo to define a new diameter limit of 18 inches. Too little information exists to be that definitive. We do feel sufficiently convinced to recommend that the Lassen NF continue its practice of not boraxing chainsaw cut stumps in precommercial thinnings in the eastside pine type.

Although some reduction in borax use might be possible by more accurately defining the diameter size limit, the cost savings would be minimal in most commercial sales and could actually increase due to possibly higher administration costs.

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